

INLAND NAVIGATION.

STAGE OF WATER IN RIVERS AND HARBORS.

In the following table are shown the danger-points at the various river stations and the highest and lowest depths for June, 1887, with the dates of occurrence, and the monthly ranges:

Heights of rivers above low-water mark, June, 1887.

[Expressed in feet and tenths.]

Stations.	Danger-point on gauge.	Highest water.		Lowest water.		Monthly range.
		Date.	Height.	Date.	Height.	
<i>Red River:</i>						
Shreveport, La.	29.9	1	15.5	30	12.2	3.3
<i>Arkansas River:</i>						
Fort Smith, Ark.	22.0	18	9.3	28, 29	4.4	4.9
Little Rock, Ark.	23.0	20	8.8	30	4.4	4.4
<i>Missouri River:</i>						
Omaha, Nebr.	18.0	29	14.9	1, 2, 3	8.9	6.0
Leavenworth, Kans.	20.0	14, 15	17.0	1	10.7	6.3
<i>Mississippi River:</i>						
Saint Paul, Minn.	14.5	1, 24	3.4	10-14, 18, 19, 29, 30	2.7	0.7
<i>La Crosse, Wis.</i>	24.0	17 to 20	5.3	8, 9, 12, 13, 30	4.5	0.8
Dubuque, Iowa	16.0	1	5.6	15, 16, 17	4.3	1.3
Davenport, Iowa	15.0	1	4.0	18, 28	2.8	1.2
Keokuk, Iowa	14.0	1	4.4	14, 20, 21, 22	2.6	1.8
Saint Louis, Mo.	32.0	18	18.0	5	11.7	6.3
Calvo, Ill.	40.0	20	23.1	6	15.1	8.0
Memphis, Tenn.	34.0	21, 22	18.6	8	12.6	6.0
Vicksburg, Miss.	41.0	1	24.9	13, 14	15.9	9.0
New Orleans, La.	13.0	1	10.0	18	5.8	4.2
<i>Ohio River:</i>						
Pittsburg, Pa.	22.0	8	13.3	29	1.5	11.8
Cincinnati, Ohio	50.0	13	26.5	25, 30	8.4	18.1
Louisville, Ky.	25.0	14	10.0	30	4.9	5.1
<i>Cumberland River:</i>						
Nashville, Tenn.	40.0	17	12.2	29, 30	1.8	10.4
<i>Tennessee River:</i>						
Chattanooga, Tenn.	33.0	8	10.4	30	3.7	6.7
<i>Monongahela River:</i>						
Pittsburg, Pa.	29.0	8	13.3	29	1.5	11.8
<i>Savannah River:</i>						
Augusta, Ga.	32.0	3	17.3	19, 20, 21	5.8	11.5
<i>Sacramento River:</i>						
Sacramento, Cal.		1 to 4	18.3	28, 29	10.7	7.6
<i>Willamette River:</i>						
Portland, Oregon		21	25.7	12	22.0	3.7

The range of water in the Mississippi did not exceed two feet at stations north of Keokuk, Iowa; the maximum range occurred between Saint Louis, Mo., and Vicksburg, Miss., where it varied from six to nine feet.

In the Ohio River the range of water varied from 5.1 feet at Louisville, Ky., to 18.1 feet at Cincinnati, Ohio.

The following notes on navigation, etc., have been reported:

Mississippi River.—Keokuk, Iowa: on the 21st the river was so low that boats ran very irregularly. The "Bart E. Lineham," with a raft of logs, was one week in making the trip from Keokuk to Quincy, a distance of thirty-five miles.

Cumberland River.—Nashville, Tenn.: on the 19th navigation was suspended, owing to the low stage of water.

Ohio River.—Pittsburg, Pa.: navigation suspended on account of low water on the 29th.

Oswegatchie Lake.—Oswego, N. Y.: at the close of the month the water in the lake was so low that the flouring mills were obliged to use steam.

FLOODS.

Fort Custer, Mont.: on the 2d the water in the Big Horn River reached the highest stage that has occurred since 1880; on the 17th the Yellowstone River was also higher than at any time during the period mentioned.

Kansas City, Mo.: between 5 and 6 p. m. on the 3d a violent rain and thunder-storm occurred at this place. The yards of the Missouri Pacific Railroad were flooded and considerable damage was done throughout the city. Passengers on incoming trains on the Kansas City, Fort Scott, and Gulf Railroad report having passed through a severe wind storm fifteen miles south of Kansas City. Much damage by lightning was reported from eastern Kansas and adjacent portions of Missouri during these storms.

Oberlin, Lorain Co., Ohio: the flood which resulted from the

very heavy rain storm of the 5th caused much damage. The streets were flooded, and several bridges were washed away.

Grafton, Lorain Co., Ohio: a violent storm occurred at this place on the 5th. The rainfall was very heavy and flooded the streets of the town and entered the cellars and lower floors of a number of buildings. A large culvert on the Cleveland, Lorain, and Wheeling Railroad was washed out.

Berea, Cuyahoga Co., Ohio: the very heavy rain of the 5th caused the most destructive freshet in Rocky Creek that has been known for fifteen years. The water rose six feet in less than two hours and overflowed the quarries in this vicinity. The superintendent of the Cleveland Stone Company states that the losses sustained by that company will amount to \$100,000.

Johnstown, Cambria Co., Pa.: a very heavy rainfall occurred to the west of Hooversville, Somerset Co., on the 7th. That village was entirely under water and more than twenty residences were washed from their foundations. The flood reached this place (Johnstown) about noon, and during the afternoon the streets and a number of cellars were flooded and large quantities of drift floated past. Much damage was done by the flood at Conemaugh, Morrillville, Grubtown, Cambria City, and Coopersdale, in Cambria Co., and at Minersville, Schuylkill Co.; several bridges were washed away. The damage is estimated at \$150,000.

Wilkesbarre, Pa.: a very heavy rain storm occurred at Nanticoke and vicinity, in Luzerne Co., on the afternoon of the 9th, flooding the streets and cellars and causing a large amount of damage. The first floors of a number of houses were submerged, and in some instances the buildings were undermined. Considerable injury was also done to the railroads in this vicinity. The losses are estimated at \$100,000.

Wheeling, West Va., 10th: the very heavy rains since the 1st of the month have caused great injury to crops throughout this state and in adjacent portions of Ohio. A number of bridges were washed away, causing delay on railroads.

Tecumseh, Johnson Co., Nebr.: the Nemaha River and all other streams in this county were much swollen on the 13th.

Key West, Fla.: rain began to fall during the early morning of the 15th, and continued at intervals until 9.50 p. m., when the precipitation amounted to 3.57 inches. This is the largest rainfall on the records of the signal office for the month of June, although heavier rainfalls have occurred in other months.

Brownsville, Tex.: from the 15th to 22d more than eleven inches of rain fell at this place. This very heavy rainfall has caused much damage to the crops in this region, especially to corn.

Atlantic City, N. J.: very heavy rain fell at intervals during the 22d, flooding the streets and causing considerable damage.

Lawrence, Mass.: on the 25th the Merrimac River rose more than ten feet, and the freshet was the most remarkable ever known at this place. The water rose to within two feet of the temporary bridge recently built across the river and it was feared that the structure would be swept away. A large number of logs were swept past the city.

Savannah, Ga.: very heavy rain fell at this place on the 27th and 28th, the total precipitation amounting to 7.60 inches. This rain storm was one of the heaviest that has occurred at this place since the establishment of the signal office. It is not thought that the crops in this vicinity were seriously damaged, as the ground was very dry previous to the rain.

Pensacola, Fla.: on the 28th thunder-storms, with showers, occurred at intervals during the day; heavy rain set in at 8.10 p. m. and continued throughout the night and morning of the 29th. The rainfall during the twenty-four hours ending at 3 p. m. of the 29th amounted to 10.70 inches, which is the heaviest shown by the records of the signal office at this place. The city and suburbs were flooded, and many washouts occurred on railroads entering this place.

HIGH TIDE.

Chincoteague, Va., 11th.